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CALL FOR PAPERS

Call for Papers, Issue 3/2024

Reimagining Digital Health: Advances in Patient-Centeredness, Artificial Intelligence, and Data-Driven Care Research

Ali Sunyaev · Daniel Fürstenau · Elizabeth Davidson

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1 Special Issue

Emerging technologies in healthcare such as wearables, robotics, nanotech, connected health, and genomics technologies produce increasing amounts of data, which fuel artificial intelligence-powered algorithms to actively react to, predict, and prevent diseases and steer scarce healthcare resources. Currently, while digitalization in the healthcare sector differs across European countries and worldwide, we see increasing advances that promise highly personalized, predictive, closed-loop, preventive healthcare solutions. These solutions present a chance to increase the quality and empower users of healthcare services, to make healthcare processes more efficient, and to create more inclusive healthcare services for disadvantaged communities and minority groups.

Business & Information Systems Engineering (BISE) has followed the adoption of important healthcare technologies such as electronic health records and digital health apps for more than a decade, beginning with a special issue on these topics (1/2013). This special issue of BISE builds on these foundations and is dedicated to emerging technologies in digital health that transform healthcare delivery–with important implications for patient value.

In this special issue, we strive for inclusivity. We are open to all work (qualitative, quantitative, computational, design) in relation to reimagining digital health, and encourage work from different regions worldwide. Submitted manuscripts should be well-grounded in theory and need to persuasively demonstrate both practical relevance and substantial contributions to the scientific knowledge base. The scope of the special issue covers the full cycle "from bench to bedside". This means we encourage work covering the potentials of emerging technologies that are on the cusp of revolutionizing healthcare, the implementation of those emerging technologies in real-world healthcare settings, to studies that are investigating how the increasing amount of healthcare data can be made usable to unleash data-driven research. While we generally accept manuscripts from a broad thematic range at the intersection of healthcare and information systems, we see two thematic foci at the core of this special issue.

1.1 Creating Patient Value from Implementing Digital Health Technologies and Reimagining Care Pathways

While digital health applications and telemedicine have become the norm in many settings, there are still large uncertainties for organizations introducing innovative technologies into healthcare settings. These concerns include, among others, regulatory and technological complexities related to medical device and digital therapeutics (DTx) regulation, data security and privacy, and healthcare

A. Sunyaev (✉)
Institute of Applied Informatics and Formal Description Methods (AIFB), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
e-mail: sunyaev@kit.edu

D. Fürstenau
Department of Business IT, IT University of Copenhagen, Copenhagen, Denmark
e-mail: daniel.fuerstenau@itu.dk

D. Fürstenau
Charité–Universitätsmedizin Berlin, Berlin, Germany

E. Davidson
Shidler College of Business, University of Hawaii at Manoa, Honolulu, USA
e-mail: edavidso@hawaii.edu

standards and interoperability. On the other hand, traditional healthcare IT implementations have been characterized by low levels of usability and user-friendliness, leading to low acceptance rates and dissatisfaction among patients and healthcare professionals. Extant implementations have also often focused on the provider perspective, leaving the creation of value for patients largely aside (Teisberg et al. 2020). Against this backdrop, we call for studies that aim to better understand how emerging health technologies are to be embedded into user-friendly and future-oriented patient care journeys. Studies may use existing or new theoretical perspectives and should go beyond simplified characterizations of technology acceptance. We see room for studies to be located on different levels of investigation such as the individual, the community, or the societal level, and may even consider multiple of those levels simultaneously. Studies may shift the focus away from only considering healthcare organizations and enterprise IT (e.g., Baird et al. 2018), to an emphasis of patient- and value-based perspectives. Arriving at such analysis may require new approaches to engage with user needs such as via behavioral nudging (Lehrer et al. 2021), gamification (Schmidt-Kraepelin et al. 2020), or virtual coaches (Tropea et al. 2021; Makin 2019), while ensuring the privacy of the emerging digital health solutions (Sunyaev et al. 2014). It may also require socio-technical processual analyses of the digital transformation of healthcare workflows and practices, for example, considering institutional (Burton-Jones et al. 2020; Faik et al. 2020), path-constitutional (Singh et al. 2015; Agarwal et al. 2022), or practice-based (Reckwitz 2020; Orlikowski and Scott 2015) perspectives.

1.2 Data Platforms and Ecosystems in Healthcare

Recent advances in wearables, devices, apps, and other digital health technologies produce increasingly large amounts of data. This data enables new possibilities for capturing, monitoring, and steering the efficiency and quality of care processes and informing research. Digital health platforms such as Ping-an-doctor (Jiang et al. 2021) and Amazon / Pillpack (Gleiss et al. 2021), on the private end of the spectrum, and community-/socially-driven approaches like PatientsLikeMe (Tempini 2015), the German Healthy Kinzigtal (Schubert et al. 2021), and APST (Fürstenau et al. 2021) are becoming increasingly widespread and store increasingly large treasures of valuable behavioral and health data, while using rating systems to give all-around feedback on the quality of healthcare processes. Beyond unlocking genuine business opportunities for the involved firms, data generated within these platforms and in the context of the arising data ecosystems need to be considered in terms of maximizing patient value. One promising way forward is to consider value in healthcare in a multi-facetted way (Barrett et al. 2016), e.g., for patients via patient-centered outcomes and procedural and structural effects on them, especially using novel real-world evidence and digital trace data. In these settings, we also need to rethink the role of data privacy with patient-generated health data (Kaplan et al. 2019). Against the background of the increasing amounts of data on many patient histories over long periods of time, and the incentive differences between stakeholders that arise, we also need to better understand health data governance in such emerging health data ecosystems (Witte et al. 2020; Winter and Davison 2019). This needs to consider new technical, organizational, and regulatory challenges (Winter and Davison in press) and emerging (infra-) structures such as health data spaces, data repositories, data commons, data natives, data trustees, and data collectives.

Some topics of interest include:

- Emerging technologies in health, e.g., wearables, robotics, nanotech, connected health, genomics
- Patient-centeredness, digital care pathways
- Patient empowerment and shared decision making
- User-centered design of health apps, DTx, and care journeys, e.g., via nudging, gamification, behavioral design
- Value of patient-generated health data
- Health data governance
- Health data spaces, data repositories, data collectives, data natives, data commons
- Data platforms and data ecosystems
- Data sharing and interoperability
- Data-driven insights in healthcare, e.g., to improve care coordination and research
- Data-driven artificial intelligence
- Privacy and security of healthcare data

2 Submission Guidelines

Please submit papers by 1 July 2023 at the latest via the journal's online submission system (http://www.editorialmanager.com/buis/). Please observe the instructions regarding the format and size of contributions to Business & Information Systems Engineering (BISE). Papers should adhere to the submission general BISE author guidelines (https://www.bise-journal.com/?page_id=18).

All papers will be reviewed anonymously (double-blind process) by at least two referees with regard to relevance, originality, and research quality. In addition to the editors of the journal, including those of this special issue, distinguished international scholars will be involved in the review process.

3 Schedule

- Deadline for submission: 1 July 2023
- Notification of the authors, 1st round: 1 September 2023
- Completion Revision 1: 1 November 2023
- Notification of the authors, 2nd round: 16 December 2023
- Completion Revision 2: 22 January 2024
- Online publication: ASAP
- Anticipated print publication: Issue 3/2024

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